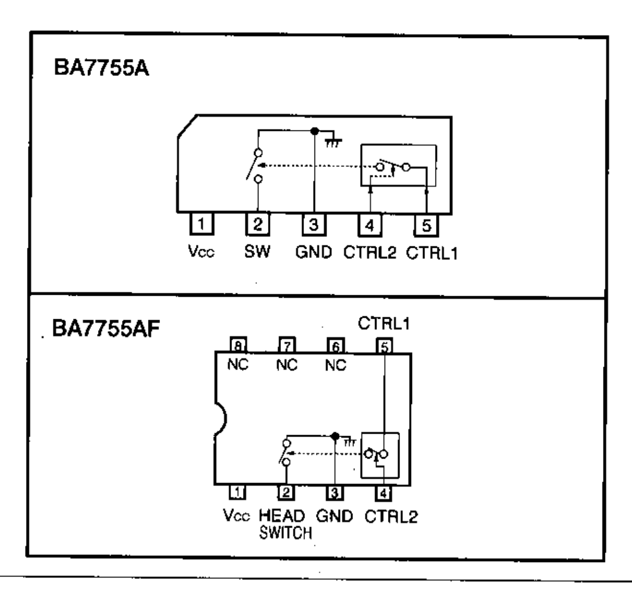
High–voltage audio head selection switch
BA7755A/BA7755AF

The normal audio circuits of video cassette recorders and the recording circuits of tape decks use AC bias recording to record the audio signal onto the tape. This bias voltage is some tens of volts, and a high–capacity bias–side switch is required to electronically switch the head when in playback or record mode.
The BA7755A and BA7755AF are high–voltage switching ICs designed to switch voltages as high as $\pm$65V_{DC} or AC120V_{P-P} (f=70Hz).
Two control systems, one for current control, and one for voltage control are provided, so the ICs can be used in circuits that employ either method.
By combining the BA7755A or BA7755AF with the BA7751ALS recording/playback amplifier is possible to construct a compact recording/playback audio circuit. In addition, the BA7755A and BA7755AF are an excellent choice for a wide variety of other high–voltage switching applications.

●Applications
Video cassette recorders and tape decks

●Features
1)High withstanding voltage ($\pm$65V_{DC} (Min.), AC120V_{P-P} (Min.), f=70Hz).
2)Circuits for either current control or voltage control are provided on the chip.
3)Compact SIP 5pin or SOP 8pin package.

●Block diagram



●Absolute maximum ratings (Ta=25℃)

Parameter	Symbol	Limits	Unit
Power supply voltage	V_{CC}	15	V
Power dissipation	Pd	400*1	mW
Operating temperature	Topr	−10~65	℃
Storage temperature	Tstg	−55~125	℃
DC breakdown voltage of switch (pin 2)	BV_{CC2}	±65	V

* Reduced by 4mW for each increase in Ta of 1°C over 25°C.

●Recommended operating conditions (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating voltage	V_{CC}	4	9	13	V

●Electrical characteristics (Unless otherwise specified Ta=25℃ and Vcc=9V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Circuit current	I_{CC1}	−	0	10	μA	4pin "L" or "OPEN" 5pin "OPEN"
Circuit current	I_{CC2}	2.4	3.9	5.6	mA	Pin 4 "L" or "OPEN" Pin 5 control current: 200 μA
Switch-on resistance	R_{ON}	−	8.0	15.0	Ω	Pin 4 "L" or "OPEN" Pin 5 control current: 200 μA
Switch leakage current	I_{LOFF}	−	0	10	μA	Pin 4 "H", "OPEN", or "L" Pin 5 "OPEN", pin 2 applied voltage ±65V
Switch AC breakdown voltage	BV_{AC}	120	160	−	V_{P-P}	f=70kHz
Switch offset voltage	V_{OS}	−	4.3	15.0	mV	Pin 4 "L" or "OPEN" Pin 5 control current: 200 μA
CTRL1 SW ON control current	$I_{CTRL1(ON)}$	50	−	−	μA	−
CTRL1 SW OFF control current	$I_{CTRL1(OFF)}$	−	−	1	μA	−
CTRL2 threshold voltage	V_{TH1}	1.70	2.15	2.60	V	−
CTRL2 input resistance	R_{CTRL2}	21.0	31.0	42.0	kΩ	−

●Switch control methods

1)Control with pins 4 and 5

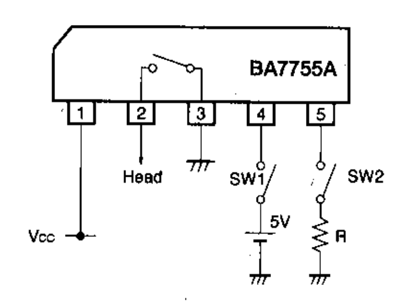


Fig.1

SW1	SW2	Between pins 2 and 3
OFF	OFF	High impedance
	ON	Low impedance
ON	OFF	High impedance
	ON	High impedance

$$R \fallingdotseq \frac{V_{CC}-1.4(V)}{200(\mu A)} - 10\ (k\Omega)$$

When Vcc = 9V (approx) R ≒28kΩ

2)Control with pin 4 only

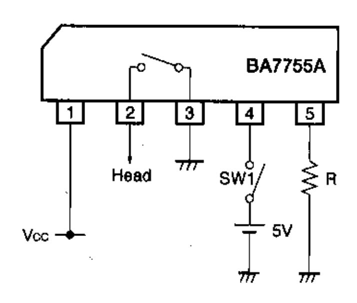


Fig.2

SW1	Between pins 2 and 3
OFF	Low impedance
ON	High impedance

3)When used with the BA7751ALS

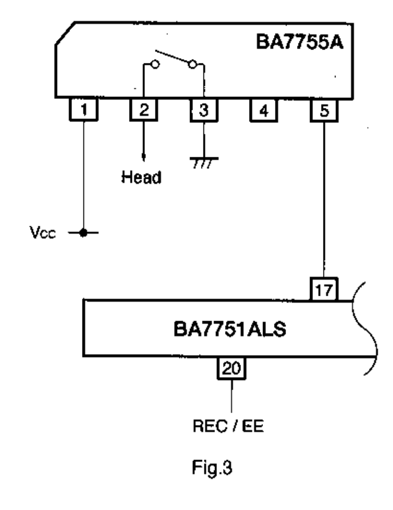
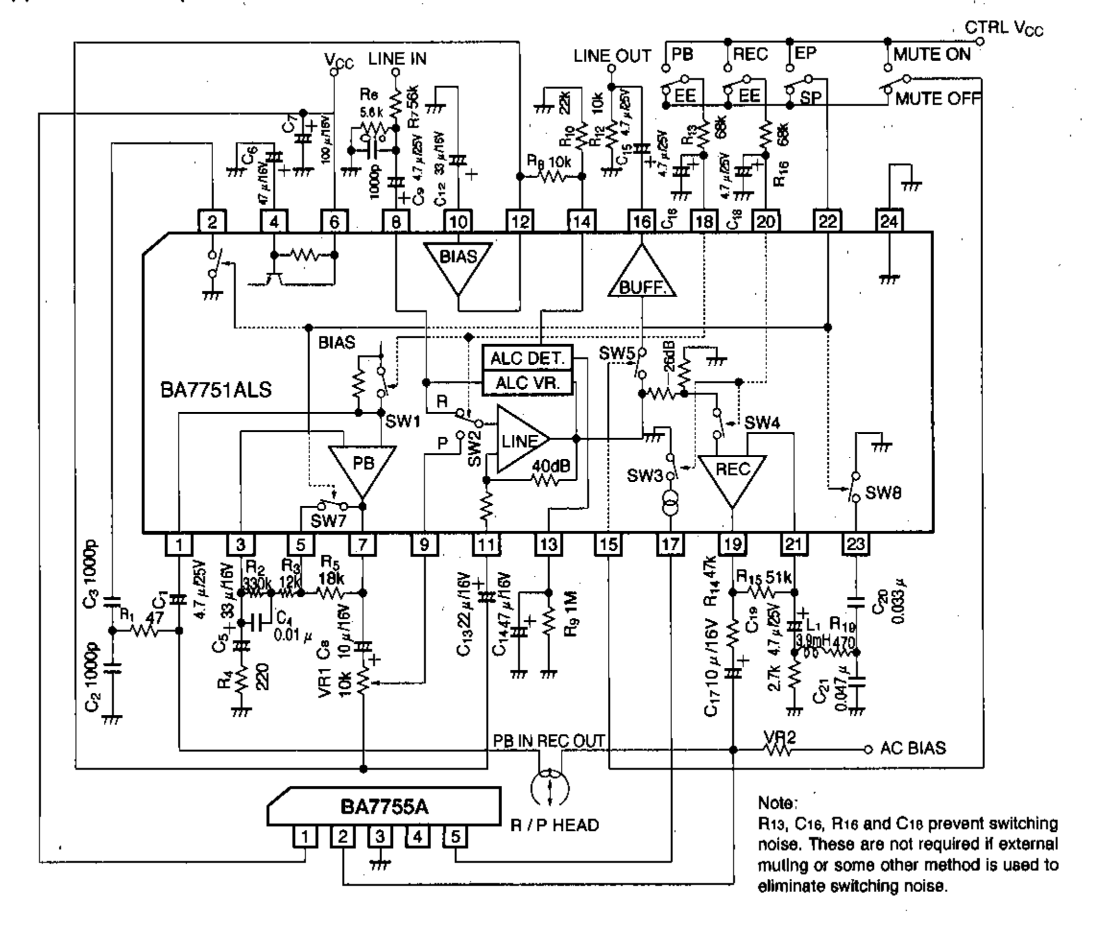


Fig.3

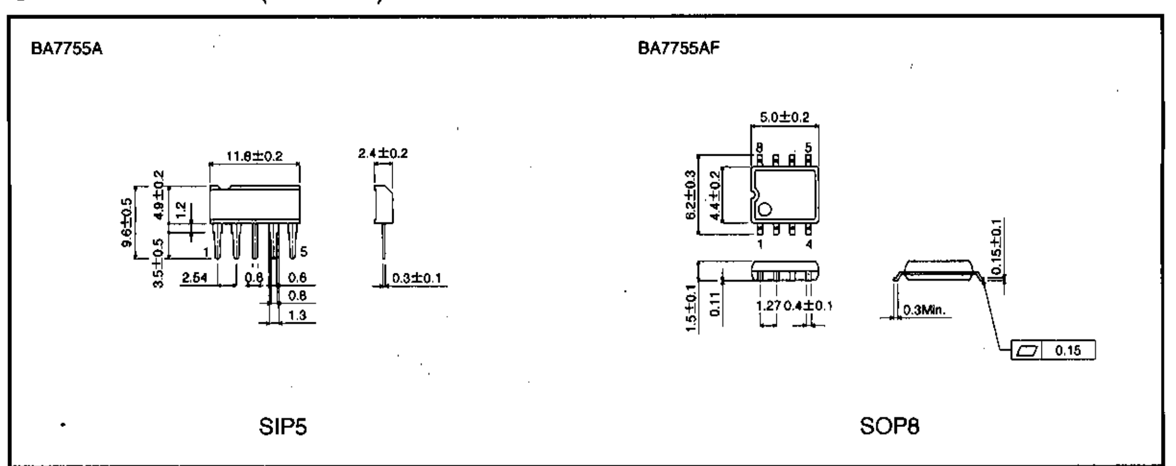
REC / EEE	Between pins 2 and 3
EE (L)	Low impedance
REC (H)	High impedance

●Application example



Note:
R13, C16, R16 and C18 prevent switching noise. These are not required if external muting or some other method is used to eliminate switching noise.

●External dimensions (Units: mm)



High-voltage head selection switch

VCR components